Exhibit 24

tween groups occurred most commonly between post-race nonbleeders and bleeders with furosemide. Such marked post-race elevations of PCV (58%), TPP (35%), and whole blood viscosity (100% to 234%) can be attributed to splenic contraction upon adrenergic stimulation in the horse and exacerbation by dehydration during competitive exercise. This uniqueness of the horse effects dramatic hematorheologic results; these in turn are major contributors to EIPH. ■

Regulation of the Retinoblastoma Anti-Oncogene Product During Cellular Differentiation

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The retinoblastoma (RB) anti-oncogene is believed to function as a recessive tumor suppressor gene in the development of retinoblastoma and other tumors. We investigated whether it might also play a role in cellular differentiation. The HL-60 promyelocytic leukemia cell line, which undergoes granulocytic or monocytic differentiation *in vitro*, was used as a model system. The modulation of the RB protein was examined by flow cytometry during treatment of HL-60 cells with various inducing agents. The RB protein levels were down regulated within 24 hours following the addition of an inducer. This preceded any overt growth or differentiation changes. The cause for the down modulation of the RB protein remains hypothetical. ■

Poster Presentations

An Automated Method for the Determination of Plasma and Erythrocyte Cholinesterase Activity in Laboratory Animals

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Precise plasma and erythrocyte cholinesterase results in safety assessment studies are important because no-effect levels are often established by this parameter. Erythrocyte cholinesterase is particularly difficult to measure spectrophotometrically because it is membrane bound. A semi-automated method for determining erythrocyte cholinesterase was optimized for use in laboratory animals. Increases in precision of up to 75% for plasma and 40% for erythrocyte cholinesterase results were achieved with the new optimized method when compared to the manufacturer's suggested method. Changes in the automated method included increasing the time allowed for the reaction to meet linearity criteria and increasing the time allowed for a minimally acceptable absorbency change to occur. Cholinesterase activity measured by this method was not affected by hemoglobin concentrations of up to 1.6g/dl in the hemolysate. The addition of a surfactant to decrease membrane interference in the hemolysate worked well for rat samples but inhibited enzyme activity in dog and mouse samples. Temperature conversion factors provided by the manufacturer were confirmed to be correct for human samples but did not accurately correct rat or dog results. New species specific temperature conversion factors were established. ■

Serum 5'Nucleotidase Activity in Rats: A New Automated Method and Criteria for Interpretation

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A new automated method for 5'nucleotidase (5'NT) was developed and validated on a large clinical chemistry analyzer. The precision of the new method was good (C.V. = 0.94%). Comparison to a manual and semi-automated method gave regression statistics of $y = 1.23X - 3.75$ $S_{y.x} = 3.3816$ and $y = 0.7281X + 2.449$ $S_{y.x} = 2.5775$, respectively. Age related increases in serum 5'NT activity were observed only in female rats beginning at about 5 to 6 weeks of age and continuing into adulthood. An analysis of the components of variation for 5'NT showed sex and age to be major contributing factors. By comparison, major components contributing to variance in GGT results were age and analytical factors. In rats dosed with alpha-naphthyl isothiocyanate (ANIT), 5'NT was a more consistent predictor of biliary necrosis than GGT and ALP in both sexes. ■